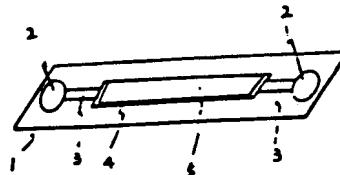


AN - 88-179269
 TI - DRY BATTERY TESTER
 PA - (0000000) NISSHO KAGAKU:KK
 IN - TAKAHASHI, NOBORU
 PN - 88.07.23 J63179269, JP 63-179269
 AP - 87.01.20 87JP-011129, 62-11129
 SO - 88.11.30 SECT. P, SECTION NO. 793; VOL. 12, NO. 456, PG. 113.
 IC - G01R-031/36; H01M-010/48
 JC - 46.1 (INSTRUMENTATION—Measurement); 42.9 (ELECTRONICS—Other)
 AB - PURPOSE: To accurately measure the remaining capacity of a dry battery by providing a thin-film, uniform-width, beltlike resistance heat generation body on a flexible film so that its area resistance value is varied slantingly, and combining heat-sensitive materials on it.
 CONSTITUTION: Terminal parts 2 to be brought into contact with the dry battery, conduction parts 3, and the uniform-width beltlike resistance heat generation body thin film 4 which is varied in area resistance in one direction are provided on a polyester film 1 which is about 100. μ m thick, and a film a film 5 of heat-sensitive paint which discolored reversely; from yellow to red at about 50 Deg.C is formed on the film 4. Then the film 1 is curved with fingers and the terminal parts 2 are brought into contact with the terminals of the dry battery, allowing a current to flow through the thin film 4. Variation in heating value at this time is caused according to variation in area resistance value to discolor the film 5 of heat-sensitive paint as if a bar graph were increased. Consequently, the current value is measured from the degree of discoloration when the current with a certain value is allowed to flow. Thus, the remaining capacity of the dry battery is accurately measured.

AN - 88-246420/35
 XRFX- N88-187358
 TI - Dry battery tester with resistance heater on soft film - changes area resistance value and combines display material to change colour when value is above reference temp. NoAbstract Dwg 1/1
 DC - S01 X16 R18 R47
 PA - (NISH-) NISHOKAGAKU KK
 NP - 1
 PN - J63179269-A 88.07.23 (8835) (JP)
 PR - 87.01.20 87JP-011129
 AP - 87.01.20 87JP-011129
 IC - G01R-031/36 H01M-010/48

NISH- * X16 88-246420/35 * J63179-269-A
 Dry battery tester with resistance heater on soft film - changes area resistance value and combines display material to change colour when value is above reference temp. NoAbstract Dwg 1/1
 NISHOKAGAKU KK 20.01.87-JP-011129
 S01 (23.07.88) G01R-31/36 H01M-10/48
 20.01.87 as 011129 (2pp)
 N88-187358



X16-H

NISH/ * X16 90-158361/21 * J02100-269-A
Dry battery with charge display - has coating on display NoAbstract
NoDwg
NISHIMORI K 07.10.88-JP-251781
(12.04.90) H01m-06/50
07.10.88 as 251781 (3pp)
N90-123485

90-158361/21 * J02100-269-A

X16-A1A X16-H



Japanese Published Patent Application (Unexamined) 2-100269

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(3 pages in all)

(54) Title of Invention:

DRY CELL WITH MEANS INDICATING STAGE OF UTILIZATION

(21) Application Number: Showa 63-251781

(22) Application Date : October 7, 1988

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SPECIFICATION

1. Title of the Invention

DRY CELL WITH MEANS INDICATING STAGE OF UTILIZATION

2. Scope of Patent Claims

Dry cell with means indicating stage of utilization, characterized in that it possesses means to indicate that utilization has been completed to some degree, and covering means, which can be peeled off, covering the above-mentioned means for indicating stage of utilization.

3. Detailed Description of the Invention

[Field of Industrial Use]

The present invention relates to dry cells; in particular, it relates to dry cells possessing means indicating the stage of utilization.

[Prior Art]

There existed in the prior art dry cells on which a paper band extended over the plus side projection. This was so that the user would know that the dry cell was unused; the user tore off the band and used the cell.

Nevertheless, nothing existed which indicated whether a dry cell was completely exhausted, or whether or not enough electric power remained to drive the motor of a tape recorder or to be used as the electric power source for a radio.

[Problems to be Solved by the Invention]

In the above-mentioned prior art cells, when not enough electric power remained to drive a tape recorder motor, there was still enough to use as a power source for a radio; to discard the cell completely at the time when it could not drive the motor of a tape recorder was uneconomic.

[Means to Solve the Problems]

The object of the present invention is to provide a dry cell having means to indicate the state of utilization, which can lead to the utilization without waste of the energy of the dry cell, by disposing means to indicate the stage of utilization of the dry cell.

The dry cells of the present invention, with means to indicate the stage of utilization, in order to achieve the above-mentioned object, are characterized in that they possess means to indicate that utilization has been completed to some degree, and covering means, which can be peeled off, covering the above-mentioned means to indicate the stage of utilization.

In the unused state of the dry cells of the present invention, which have means to indicate the stage of utilization, the indication of the stage of utilization, to the effect that utilization has been completed to a certain degree, is hidden by means of a covering means. Then, at a stage when the cell has been utilized to some degree, the covering means is removed by the user. By thus doing, the user recognizes that the dry cell can be utilized for another purpose. Once the covering means has been removed, and the means indicating the stage of utilization has been exposed, this kind of dry cell is utilized for some other purpose.

[Embodiment Example]

An embodiment example of a dry cell with means, with which the present invention is concerned, to indicate the stage of utilization will next be described with reference to the drawing.

Figure 1 (a) and (a) are perspective drawings to show a dry cell with means to indicate the stage of utilization, with which the

present invention is concerned.

In the Figure, 1 is the dry cell, and 2 is an indication, printed on the side of the dry cell 1, of the stage of utilization, to the effect that utilization has been completed to a certain degree. In the present invention, the indication of the stage of utilization, to the effect that utilization has been completed to a certain degree, may be stated in characters or may even be a symbol or design. Furthermore, these indications are an indication to the effect that the utilization of the dry cell has been completed to a certain degree, or can indicate what degree of utilization is possible afterwards, or can indicate what kinds of utilization purposes the cell can further be utilized for.

3 is a covering means which can be peeled off and which covers the utilization stage indication means 2, and consists of vinyl peel-off tape, or metal foil and the like which can be scraped off by means of a coin etc. The surface of the covering means 3, or its vicinity, preferably shows an instruction when utilization has been completed to some degree; it is preferable for the covering means 3 to peel off and thus provide an instruction.

The present invention has been explained based on the illustrated preferred embodiment example, but various modifications and changes are possible without departing from the scope of the present invention.

[Utility of the Invention]

The present invention, as described above, possesses the utility that it can lead to utilization, without waste, of the energy of a dry cell, because it possesses means for indicating the stage of utilization, to the effect that utilization has been completed to a certain degree, and possesses covering means, which can be

peeled off, to cover the means for indicating the stage of utilization.

4. Brief Description of the Drawings

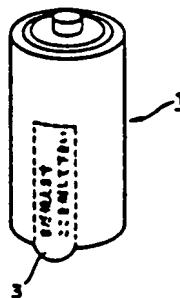
Figures 1 (a) and (a) are perspective views of one embodiment example of a dry cell with usage status indication means according to the present invention.

- 1 ... dry cell
- 2 ... usage status indication
- 3 ... covering means

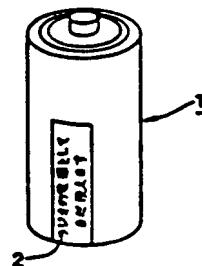
KEY TO FIGURE:

- 2 ... For further use as power source for radio
- 3 ... For further use, please peel this off

(a)



(b)



Formal Notice of Revision

February 27, 1990

Director-General of the Patent Office

1. Reference to Subject

Patent Application, Showa 63-251781

2. Title of Invention

Dry Cell With Usage Status Indication Means

3. Person Making Revision

Relation to Case

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4. Date of Revision Order

January 31, 1989

5. Subject of Revision

Specification, column of "Detailed Description of the Drawings"

6. Content of Revision

Specification, page 5, line 8, revise "(a) and (a)" to "(a) and (b)".

[Patent Office date stamp, February 27, 1989]